Exemption No. 5985

UNITED STATES OF AMERICA
DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION
FORT WORTH, TEXAS 76193-0100

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In the matter of the petition of *
*
Bell Helicopter Textron, Inc. *
*
for an exemption from § 29.1303(g)(1) *
of the Federal Aviation Regulations *
****

Regulatory Docket No. 008SW

GRANT OF EXEMPTION

By letter dated June 20, 1994, Bell Helicopter Textron, Inc. (BHTI), Fort Worth, Texas 76101, petitioned for an exemption from the Federal Aviation Regulations (FAR) to the extent necessary to allow the use of a required standby attitude indicator for all BHTI Model 412 series transport helicopter type designs that will provide useable indication through flight attitudes of ± 60 degrees pitch.

The petitioner requests relief from the following regulation:

Section 29.1303(g)(1) states, in part, that a standby attitude indicator be useable through ± 80 degrees of pitch.

The petitioner supports its requests with the following information:

BHTI requests an exemption to allow use of a standby attitude indicator that is useable through pitch attitudes of ± 60 degrees for the BHTI Model 412 transport category series helicopter.

BHTI states that use of this standby indicator would not compromise safety, as flight that results in pitch angles greater than ± 60 degrees is highly unlikely and prohibited by the approved operating limitations for the Model 412 flight envelope. Therefore, this instrument capability is adequate for the Model 412 series transport category helicopter. Additionally, this instrument is FAA approved and has been used in service for the Model 412 series transport category helicopter since late 1992. No recorded accidents, pilot complaints, or operational problems have been received. BHTI states that the safety of the helicopter, its occupants, and those on the ground is in no way jeopardized with the continued use of this standby attitude indicator installed in the Model 412 helicopters.

The petitioner states that the instrument meets TSO-C4c requirements of at least ± 25 degrees for pitch attitude. However, Amendment 29-14 (42 FR 36972, July 18, 1977) established instrument capability requirements that are both beyond the TSO requirements and well beyond the operational limitations of this helicopter. BHTI states that the 14 CFR 29.1303(g)(1) requirements of ± 80 degrees of pitch are both unrealistic and

dangerous and allow a pilot to get into an unrecoverable maneuver. An attitude of ± 80 degrees is normally considered an acrobatic maneuver, and acrobatics are prohibited in this aircraft.

The petitioner states that it is not in the public interest to impose unrealistic requirements which do not add to safety but do add to cost. The petitioner further states that the pitch requirements in § 29.1303(g)(1) of Amendment 29-14 are both unrealistic and burdensome to BHTI because the helicopter cannot be safely operated at those attitudes. BHTI is being forced to install instruments to meet unrealistic requirements at a much greater cost without providing any increase in safety of the BHTI Model 412 series helicopters.

A summary of the petition was published in the Federal Register (59 FR 40079) on August 5, 1994, and no comments were received.

The FAA's analysis is as follows:

The TSO-C4c requirements do not necessarily have a direct bearing or relevance to an aircraft's installation requirements as TSO's are an approval for manufacturing and approving equipment. The TSO approval does not mean that the equipment is qualified for all possible aircraft installations. Most applications of standby attitude indicators qualified to TSO-C4c standards are for airplane installations. Furthermore, the FAA does not believe that the § 29.1303(g)(1) requirement for ± 80 degrees pitch capability is unrealistic or dangerous as suggested by BHTI personnel since this is not a flight requirement for any aircraft but an instrument specification. The standby attitude indicator must provide vital flight attitude information to the flight crew during normal and abnormal flight maneuvers.

Therefore, the FAA has determined that relief from the standards for the standby attitude indicator can be provided as requested by BHTI. The FAA agrees that strict adherence to the cited standard in this case would not increase safety, and the public's best interest would be served by allowing use of this standby indicator with ± 60-degree pitch capability in the BHTI 412 series transport category helicopter. The FAA believes it is unlikely that the primary attitude indicator would fail causing reliance on the standby attitude indicator and the rotorcraft would also experience a flight maneuver with a pitch angle in excess of ± 60 degrees simultaneously. Additionally, the opportunity for such an occurrence is mitigated by the fact that the primary attitude indicator must be operational prior to departure for operations that require attitude indication, and a failure of the attitude indicator would be limited to the duration of one flight.

In consideration of the foregoing, I find that a grant of exemption as requested is in the public interest and would not adversely affect the safety of the BHTI Model 412 series helicopters. Therefore, pursuant to the authority contained in 49 U.S.C. 40113 (1994) (formerly §§ 313(a) and 601(c) of the Federal Aviation Act of 1958), delegated to me by the Administrator (14 CFR 11.53), BHTI is

granted an exemption from the pitch requirements of § 29.1303(g)(1) of the Federal Aviation Regulations for the BHTI Model 412 series helicopter provided:

> The minimum pitch attitude capability of the standby attitude indicator is ± 60 degrees, and these limitations are to be included in the flight manual normal procedures section of BHTI Model 412 series helicopter flight manuals.

Issued in Fort Worth, Texas, on November 14, 1994.

Mark R. Schilling

Mark R. Schilling
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